CLAIMS

1. A hearing enhancement system for a user comprising:

an interface unit that has a directional speaker attachable to clothing worn by the user and a microphone;

wherein

the microphone receives input audio signals, which are transformed into ultrasonic signals;

the speaker transmits the ultrasonic signals;

at least a portion of the ultrasonic signals is transformed into output audio signals by interaction with air;

the speaker directs the output audio signals towards at least one ear of the user from the worn position of the speaker; and

a portion of the input audio signals is amplified more than another portion to enhance the hearing of the user.

2. A hearing enhancement system as recited in claim 1 wherein the amplification is frequency dependent.

3. A hearing enhancement system as recited in claim 2 wherein the amplification focuses on higher audio frequencies.

4. A hearing enhancement system as recited in claim 2 wherein certain frequencies of the input audio signals are not amplified.

5. A hearing enhancement system as recited in claim 2 wherein the amplification depends on at least one characteristic of the hearing of the user.

6. A hearing enhancement system as recited in claim 5 wherein the at least one characteristic of the hearing of the user is determined through calibration.

7. A hearing enhancement system as recited in claim 1 wherein the system can be de-activated by the user.

8. A hearing enhancement system as recited in claim 1 wherein the system can be activated depending on at least one word said by the user.

9. A hearing enhancement system as recited in claim 1 wherein depending on the power level of the input audio signals, the system can be in a standby mode.

10. A hearing enhancement system as recited in claim 1 wherein depending on the average power level of the input audio signals, the system can be in a standby mode.

11. A hearing enhancement system as recited in claim 1 wherein the microphone is a directional microphone.

12. A hearing enhancement system as recited in claim 1 wherein the amplification reduces if the average power level of the input audio signals is higher than a preset threshold.

13. A hearing enhancement system as recited in claim 1 wherein the system further includes a rechargeable battery.

14. A hearing enhancement system as recited in claim 1 wherein the system also can function as a phone.

15. A hearing enhancement system as recited in claim 1 wherein the speaker is a phase array.

16. A hearing enhancement system as recited in claim 1 wherein the system can also access audio signals from another instrument through a wire connection, or wirelessly through a wireless local area network.

17. A hearing enhancement system as recited in claim 16 wherein the another instrument is a portable instrument.

18. A hearing enhancement system as recited in claim 16 wherein the instrument is an entertainment unit.

19. A hearing enhancement system as recited in claim 16 wherein the instrument is a phone.

20. A hearing enhancement system as recited in claim 16 wherein the instrument is related to a microphone at an event.

21. A hearing enhancement system as recited in claim 16 wherein the instrument is related to a speaker at an event.

22. A hearing enhancement system for a user comprising:

a directional speaker attachable to clothing worn by the user;

a microphone; and

a computing unit operatively coupled to the directional speaker and the microphone,

wherein the microphone receives input audio signals, and the computing unit transforms the input audio signals into modified audio signals by modifying certain frequencies differently than other frequencies to enhance the ability of the user to hear the input audio signals, and provides the modified audio signals to the directional speaker,

wherein the directional speaker outputs ultrasonic signals based on the modified audio signals.

23. A hearing enhancement system as recited in claim 22, wherein at least a portion of the ultrasonic signals output by the directional speaker are transformed into output audio signals by interaction with air.

24. A hearing enhancement system as recited in claim 22, wherein the directional speaker directs the ultrasonic signals towards at least one ear of the user from the worn position of the directional speaker.

25. A hearing enhancement system as recited in claim 22, wherein the computing unit is integral with the directional speaker.

26. A hearing enhancement system as recited in claim 22, wherein the computing unit is separate from the directional speaker but operatively couples with the directional speaker over a wireless link.

27. A hearing enhancement system as recited in claim 22, wherein the computing unit has a reduced power mode and a normal power mode, and wherein the computing unit can be automatically switched between the power modes based on characteristics of the input audio signals, thereby reducing power consumption by the computing unit.